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RESULTS MANAGEMENT  
MONTANA HIGHWAY SAFETY PROGRAM

*MONTANA SAFETY*



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RESULTS MANAGEMENT  
IN  
THE MONTANA HIGHWAY SAFETY PROGRAM

INTRODUCTION

Purpose of this Presentation

This paper has been prepared to highlight the progress made by the Highway Traffic Safety Division, Department of Community Affairs, in the implementation of Results Management techniques. The forum to demonstrate these techniques has been selected to contrast the effectiveness of the Montana Highway Safety Program and some of its activities with an activity mandated by the Federal Department of Transportation, i.e., Standard 301, Periodic Motor Vehicle Inspection (PMVI).

The comparison will focus on:

1. The actual effectiveness of the Highway Safety Program vs. the potential effectiveness of PMVI.
2. Actual cost/benefits being produced by selected activities of the Highway Safety Program vs. potential cost/benefits of PMVI.
3. The effect of diverting funds to PMVI from current, cost effective Montana Highway Safety Programs.

Background and History

The National Traffic and Motor Vehicle Safety Act of 1966 directs the Secretary of Transportation to issue safety standards for new and used motor vehicles.

In addition, the Highway Safety Act of 1966 directs the Secretary of Transportation to issue uniform standards for highway safety expressed in terms of performance criteria. The Act further provides uniform standards promulgated by the Secretary shall be developed in cooperation with States and other interested parties. The Act authorizes funds to aid the States in conducting highway safety programs, and also provides penalties or sanctions - i.e., such funds shall not be apportioned to any State which is not implementing a highway safety program approved by the Secretary. Further, Federal Aid Highway Funds can be reduced by 10% if a highway safety program is not implemented to the satisfaction of the Secretary.

The Highway Act of 1973 mandates "no new safety standards or revisions shall be promulgated after the enactment of the Act unless otherwise specifically provided by law."

#### The Sanction

The State of Montana is being subjected to the "sanction" process of the U.S. Department of Transportation for not implementing Standard 301 - PMVI. Application of the sanction can result in the annual loss to the State of \$ 700,000 in Highway Safety Funds and \$ 6.9 Million in Highway Construction Funds.

#### Position in Summary

The following points present our position relative to the sanction:

1. The sanction should not be applied because the analysis of available information does not indicate that PMVI Standard 301 would be cost-effective for Montana. (see page 12 )

2. The Highway Safety Act permits sanction if a State's highway safety program is not being implemented satisfactorily. Standard 301 does not constitute the entire highway safety program. Other aspects of the Montana Highway Safety program are producing program impact. A sanction under Standard 301 alone without regard to program effectiveness would not appear to be consistent with the intent of the law. (see page 8)

3. The incorporation of Vehicle in Use (VIU) Standards into Standard 301 - Periodic Motor Vehicle Inspection, effective April 1, 1974 by the National Highway Safety Administration, was not promulgated in accordance with Section 402(h), Title 23 as amended by the 1973 Federal Aid Highway Act, Section 229. Therefore, the sanction has no legal basis. (see page 1)

4. The Highway Safety Act requires the implementation of uniform standards. Standard 301 is not being required to be implemented uniformly among all the states, therefore, singling out 19 States for sanction under this standard is discriminatory. (see page 3)

5. Not only is Standard 301 not being implemented uniformly, but compliance with all the other standards is not being uniformly enforced through sanctions, therefore selective arbitrarily singling out three of the eighteen standards for sanction is discriminatory. (see page 5)

RESULTS MANAGEMENT  
IN  
THE MONTANA HIGHWAY SAFETY PROGRAM

INDEX

<u>SECTION</u>	<u>TITLE</u>	<u>PAGE</u>
I	STANDARD 301 IMPROPER PROMULGATION	1
II	STANDARD 301 NON-UNIFORM IMPLEMENTATION	3
III	NON-UNIFORM ENFORCEMENT OF STANDARDS	5
IV	MONTANA'S HIGHWAY SAFETY PROGRAM	
IV-A	Problem Analysis	6
IV-B	Program Effectiveness	8
IV-C	Investment of State Resources	11
IV-D	Cost Benefit Analysis	12
IV-E	Need for Support	14
IV-F	Recognition of Montana Highway Safety Program	16



## RESULTS MANAGEMENT

IN

### THE MONTANA HIGHWAY SAFETY PROGRAM

#### SECTION I STANDARD 301 - IMPROPER PROMULGATION

STANDARD 301 - PERIODIC MOTOR VEHICLE INSPECTION WAS NOT PROPERLY PROMULGATED.

The Federal Aid Highway Act of 1973 provides -

"Section 229--Subsection (h) of Section 402 of title 23, United States Code, is amended to read as follows:

(h) Each uniform safety standard promulgated under this section on or before July 1, 1973, shall continue in effect unless otherwise specifically provided by the law enacted after the date of enactment of the Federal Aid Highway Act of 1973. The Secretary shall not promulgate any other uniform safety standard under this section (including by revision of a standard continued in effect by the preceding sentence) unless otherwise specifically provided by law enacted after the date of enactment of the Federal Aid Highway Act of 1973."





Vehicle in Use (VIU) standards were made an integral part of Standard 301 by NHTSA Notice 900, April 1, 1974. NHTSA's position is that making the VIU Standards a part of Standard 301 does not amend Standard 301 and does not require an amendment by law as required by the Highway Act of 1973. Because of the significant effect on Standard 301, both in terms of cost and operational change required by the states, we submit VIU is in fact an amendment of the Standard and the NHTSA interpretation otherwise is a questionable attempt to by-pass Congressional intent expressed as law.

The purpose of the Highway Safety Act of 1966 is to reduce traffic death, injuries, and accidents. Application of sanctions should be as per the law, a last resort to be applied where the total program is not effective because a sanction reduces the resources available to impact program needs.



# RESULTS MANAGEMENT

IN

## THE MONTANA HIGHWAY SAFETY PROGRAM

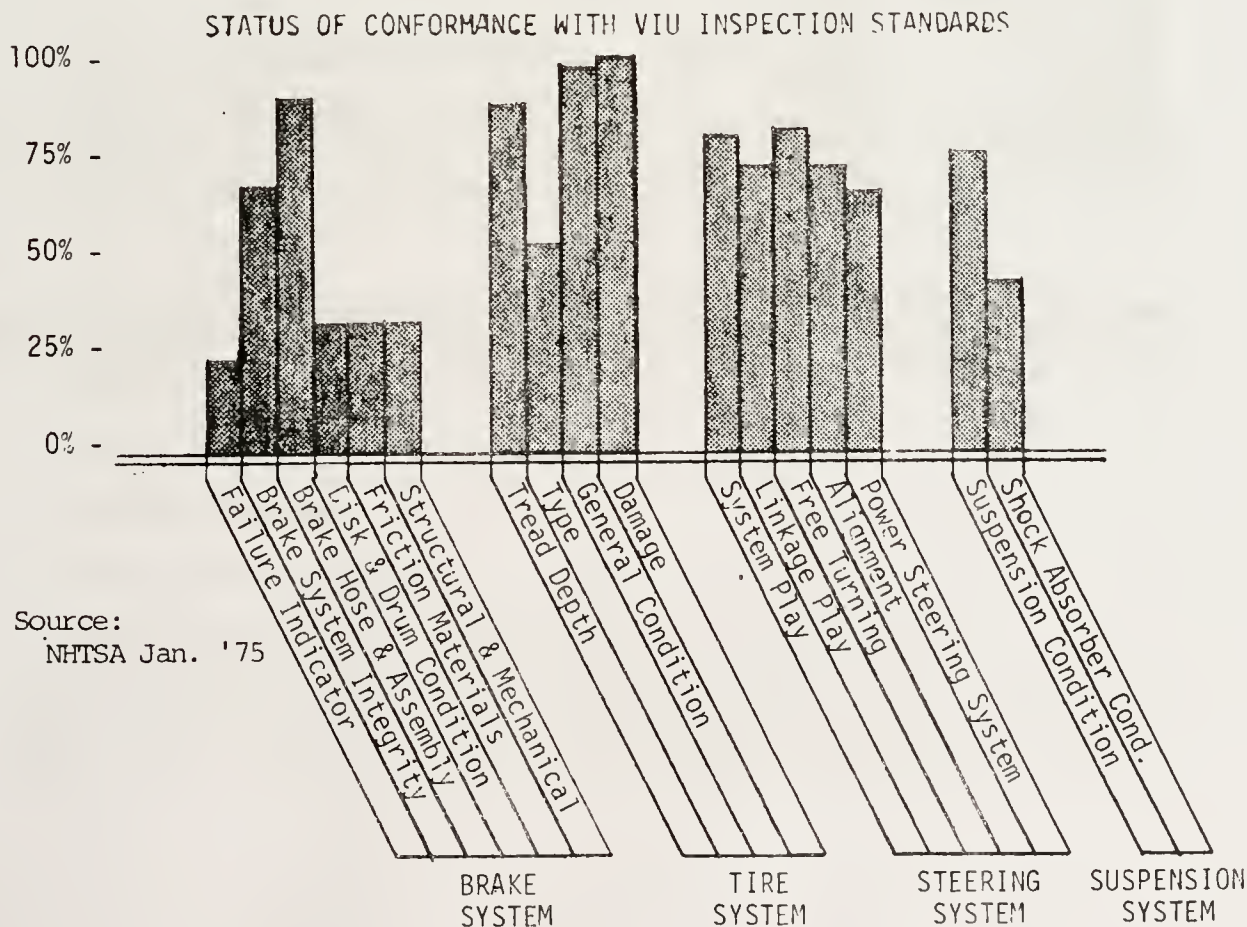
### SECTION II STANDARD 301 - NON-UNIFORM IMPLEMENTATION

The following tables indicate the degree of implementation with Standard 301 nationwide:

#### STATES (including Washington D.C. and Puerto Rico)

	Number.	Percent
Implementing Standard 301 (with VIU)	33	63%
Not Implementing Standard 301 (with VIU)	19	37%
	<u>52</u>	<u>100%</u>

Within the group of 33 states, which are classed as implementing Standard 301 there is a wide degree of variation in implementing certain of the systems which constitute the Standard including the Vehicle In Use (VIU) standards.



Within the group of 19 non-implementing states, there is a variance in the types of motor vehicle inspections and the degree of coverage and compliance included in alternate "demonstration projects" which may provide an escape clause from the sanction.

The following table shows the differences:

STATES NOT IMPLEMENTING STANDARD 301

	Type Inspection	Demonstration Project
Alabama	None	Diagnostic Inspection Demonstration Project
Alaska	None	
Arizona	None	Diagnostic Inspection Demonstration Project
California	Random	
Connecticut	Random	Random Spot Inspection
Illinois	Other	
Iowa	Owner Transfer	
Kansas	Owner Transfer	Random Spot Inspection
Maryland	Random and Owner Transfer	
Michigan	Random	Random Spot Inspection
Minnesota	Random	
Montana	Random	
Nevada	None	
North Dakota	Random	
Ohio	Random & Other	Random Spot Inspection
Oregon	Random	
Tennessee	Other	Diagnostic Inspection Demonstration Project
Washington	Random	
Wisconsin	Random	

We have seen no substantive analysis that shows states who have implemented PMVI have lower fatal, injury and accident rates or a lower incidence of vehicle failure as contributing/caused factors.

# RESULTS MANAGEMENT

## IN THE MONTANA HIGHWAY SAFETY PROGRAM

### SECTION III - NON-UNIFORM ENFORCEMENT OF STANDARDS

The enforcement of the standards has not been uniform. Certain standards, without regard for accident reduction potential or cost effectiveness considerations, have been selected for "tough" enforcement. The following table contrasts the (1972)\* status of compliance with the proposed sanctions.

No.	Standard Title	Full Compliance	NUMBER OF STATES		Proposed Sanctions
			Partial Compliance	No Compliance	
1.	Periodic Motor Vehicle Inspection	9	24	19	19
2.	Motor Vehicle Registration	23	24	5	0
3.	Motorcycle Safety	15	29	8	5
4.	Driver Education	15	33	4	0
5.	Driver Licensing	1	42	9	9(a) ,17(b)
6.	Codes & Laws	41	5	6	0
7.	Traffic Courts	10	32	10	0
8.	Alcohol in Relation to Highway Safety	10	41	1	0
9.	Identification and Surveillance of Accident Locations	0	30	22	0
10.	Traffic Records	5	47	0	0
11.	Emergency Medical Services	4	15	33	0
12.	Highway Design, Construction	0	39	13	0
13.	Traffic Engineering Services	0	39	13	0
14.	Pedestrian Safety	0	44	8	0
15.	Police Traffic Services	0	43	9	0
16.	Debris Hazard Control & Cleanup	19	18	15	0

(a) No classified license (b) No periodic re-examination

Definition of Compliance: Full= 100% Partial = 99% to 50%. No = 50% & under.  
Source: "Report Card" - 1972\* (This is the most current information available to Montana and should be updated to more accurately present the situation).

RESULTS MANAGEMENT  
IN  
THE MONTANA HIGHWAY SAFETY PROGRAM

SECTION IV - MONTANA'S HIGHWAY SAFETY PROGRAM

IV-A Problem Analysis

The previous sections I, II, and III of this paper deal with the "legalisms" of why a sanction for Standard 301 should not be applied. This section presents the substance of the issue - i.e. there is substantial evidence that implementation of Standard 301 could be counter productive and detract from proven activities.

Our strategy for managing the Montana Highway Safety Program is to identify and quantify problems, define the results we need (and can afford) and apply our resources to activities designed to produce the results.

To put the problem of PMVI in perspective, we are presenting national and statewide indicators. National studies (the Indiana University Study) indicate the following factor involvement in traffic crashes.

FACTORS	PER CENT	INVOLVEMENT
	Certain	Probable
Human	85%	91%
Environmental	18%	31%
Vehicular	6%	16%

Montana accident statistics for 1974 support the above national figures relating to vehicular factors. Mechanical defects are reported in 2.9% of all vehicles involved in accidents and 4.6% of all vehicles involved in fatal accidents.

We have attempted to apply our resources consistent with the magnitude of the problem and the probability of success. Our techniques to measure application of resources is not precise and the following is our best estimate. Financial resources to be applied to the human, environmental and vehicle factors in the FY 1976 Annual Work Program are:



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Problem Area	Total Dollars		State Dollars		Federal Dollars	
Factors	Include C+M*	Without C+M	Include C+M*	Without C+M	Need	Available
Human	14%	39%	14%	63%	20%	45%
Environmental	70%	18%	84%	26%	21%	47%
Vehicular	16%	43%	2%	11%	58%**	8%

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\* Includes Highway Construction and Maintenance Costs (C+M)  
(including Federal Aid Highway Funds) for safety features

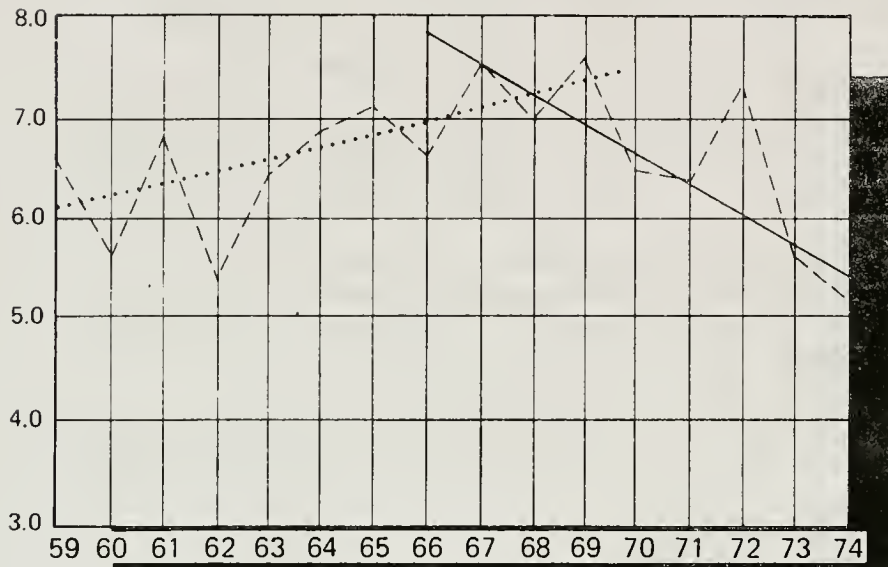
\*\* Includes cost for PMVI initiation and implementation

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#### IV-B - Effectiveness

OUR PROGRAM IS EFFECTIVE IN REDUCING TRAFFIC DEATHS

### DEATH RATE/100 MILLION VEHICLE MILES



During year's 1959-1966, the traffic death rate per 100 million vehicle miles was increasing at the rate of .1 per year.

Since 1967, the year the Highway Safety Program was initiated, the death rate has been decreasing by .3 per year.

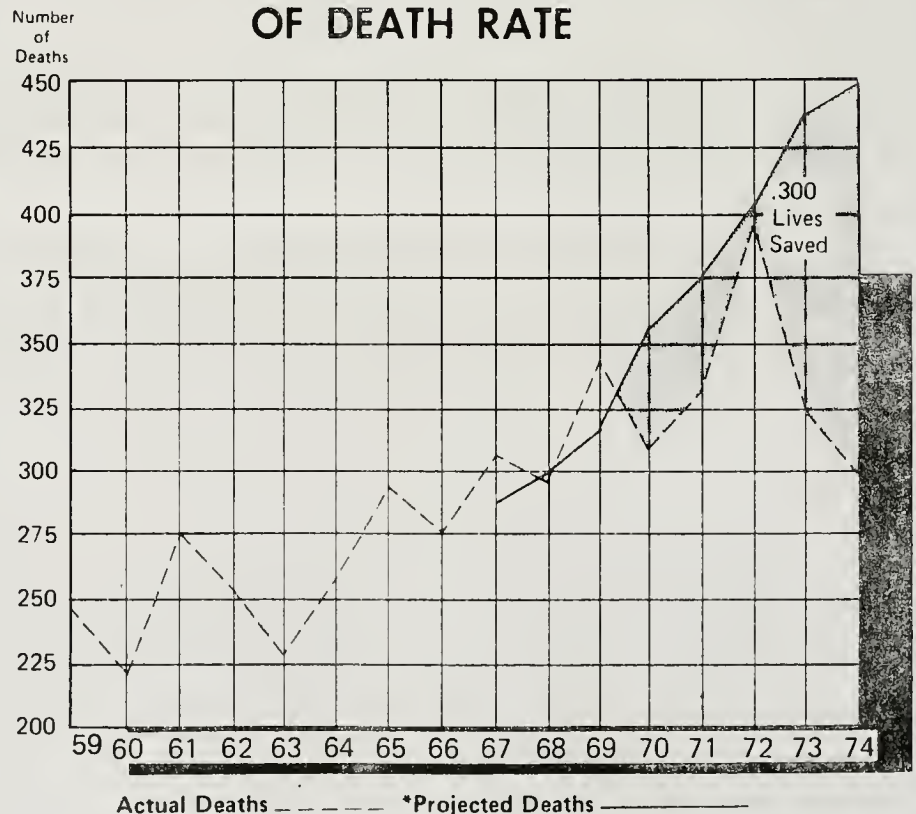
Death Rate Trend (1959-1966) ( $r^2 = .61$ ) .....

Death Rate Trend (1967-1974) ( $r^2 = .20$ ) \_\_\_\_\_

Actual Death Rate - - - - -

### 'LIVES SAVED' THROUGH REDUCTION OF DEATH RATE

If traffic deaths would have continued to occur at the 1959-1966 trend during the years 1967-1974, Montana would have experienced an additional 300 deaths during those years. Using National Safety Council figures, these 300 lives saved represent an economic savings of \$27 million. The measurement of savings in human suffering we will leave to you to calculate.



Actual Deaths - - - - - \*Projected Deaths \_\_\_\_\_

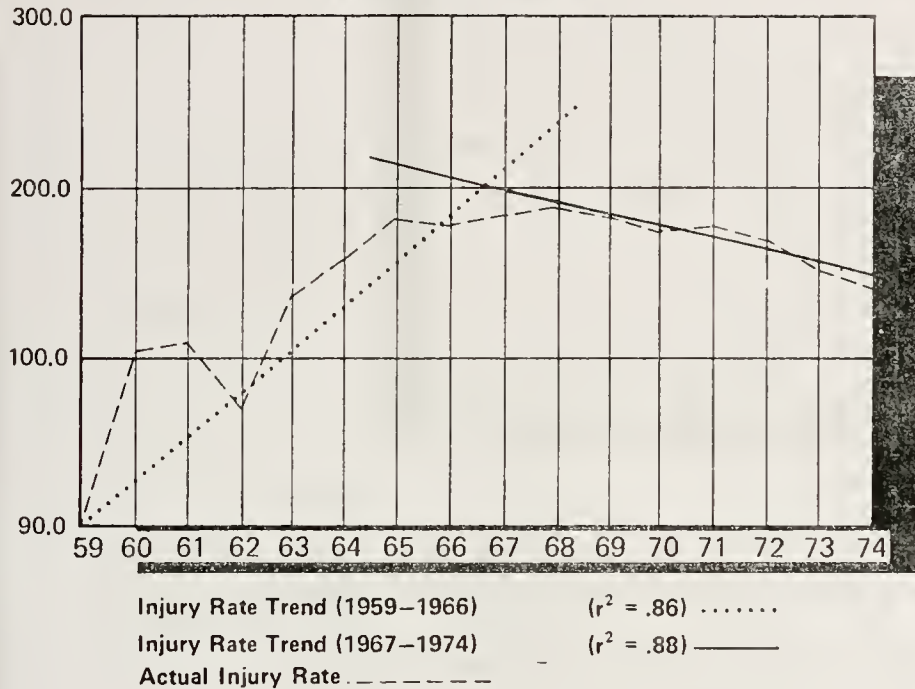
\*Based on Death Rate Trend 1959-1966



# IV-B - Effectiveness (continued)

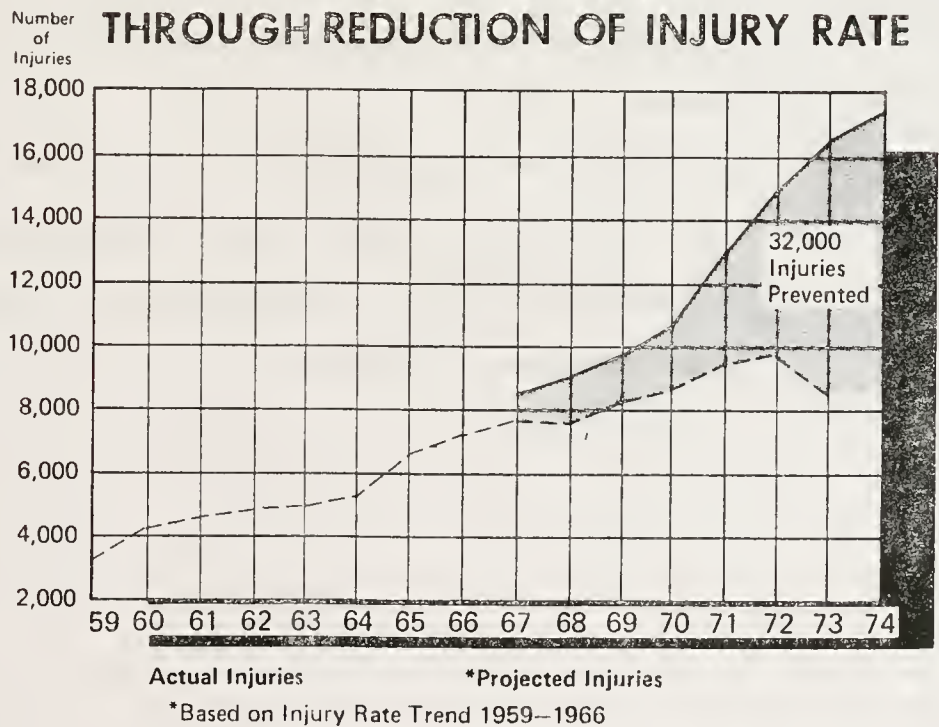
OUR PROGRAM IS EFFECTIVE IN REDUCING TRAFFIC INJURIES

## INJURY RATE/100 MILLION VEHICLE MILES



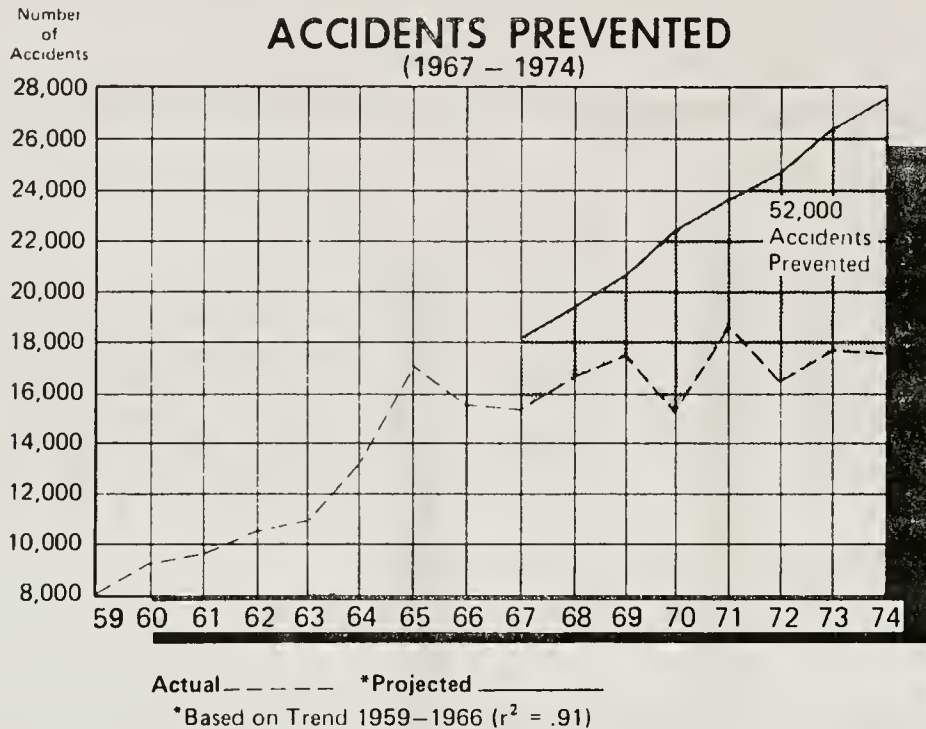
If traffic injuries would have continued to occur at the 1959 - 1966 trend during the years from 1967 Montana would have experienced an additional 32,000 injuries from traffic accidents. Using National Safety estimates, these 32,000 injuries prevented represented an economic savings of \$118 million. Again we ask you to calculate the savings in human suffering.

## 'INJURIES PREVENTED' THROUGH REDUCTION OF INJURY RATE



#### IV-B - Effectiveness (continued)

OUR PROGRAM IS EFFECTIVE IN REDUCING TRAFFIC ACCIDENTS



During the years 1959 - 1966, traffic accidents were increasing by 1300 per year. Since 1967 traffic accidents have been decreasing by 60 per year. The difference between the trend of 1959 - 1966 and actual reported accidents since 1967 shows that 52,000 accidents were prevented and economic savings of an additional \$10 million were realized.

OUR HIGHWAY SAFETY PROGRAM HAS BEEN SHOWN TO BE EFFECTIVE. We have significantly reduced DEATH, INJURIES and ACCIDENTS since 1967. We believe this success is attributable to a large degree to our program "Management by Results."

#### Section IV-C Investment of State Resources

The success of Montana's Highway Safety Program has produced a positive reaction from state government. There has been a significant increase in state funding.

Following are examples:

	FUNDING	
	Base Year	1974
Driver Education	\$ 280,000	\$1,114,000
Driver Licensing	402,000	1,013,000
Police Traffic Services	3,135,000	5,433,000

CITIZENS

WILL

SUPPORT

GOVERNMENT

PROGRAMS

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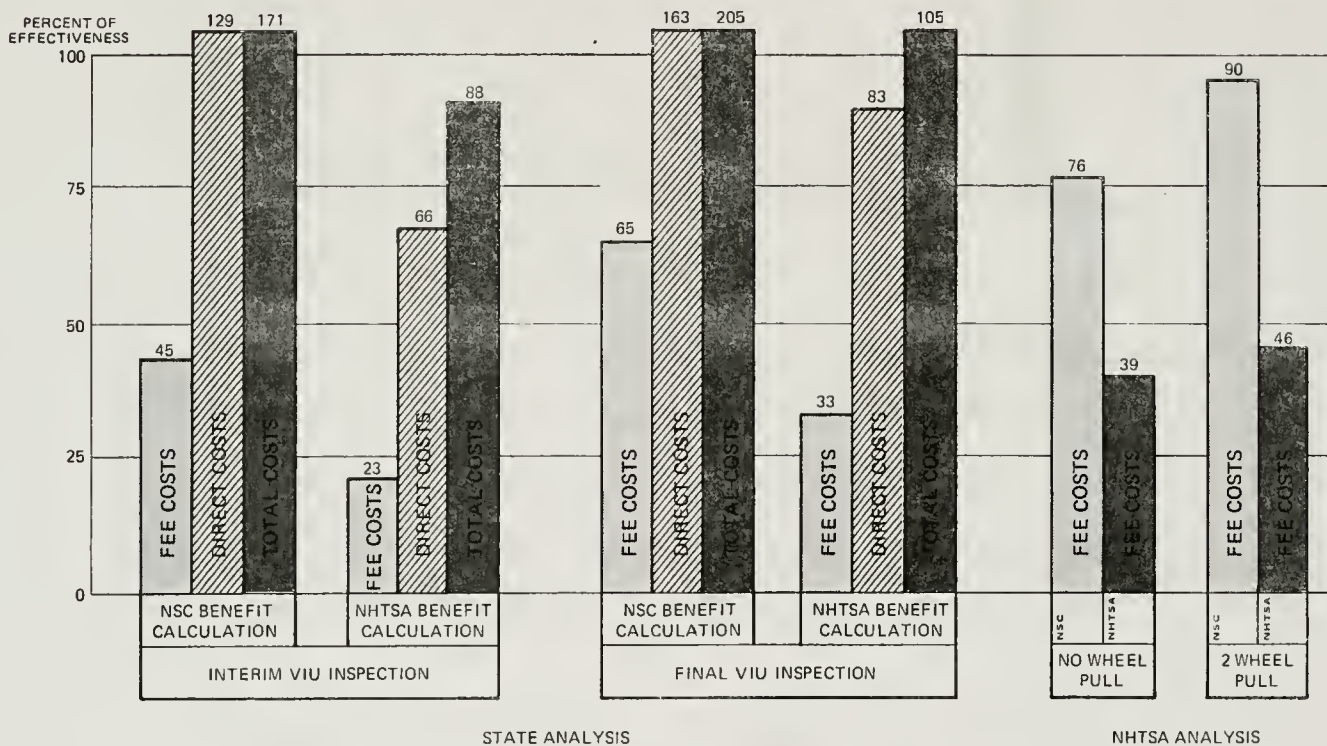
BENEFIT.

## Section IV-D Costs/Benefits

In order to answer the question of cost/effectiveness of PMVI, we must know how effective in reducing traffic crashes, injuries and deaths must a PMVI program have to be to produce benefits.

The chart below presents our analysis.

### STATE OF MONTANA FOR PMVI TO BREAK EVEN WE MUST HAVE THE FOLLOWING EFFECTIVENESS



To conclude that PMVI produces a positive cost/benefit stretches the very fabric of reason. NHTSA has tried to justify PMVI by comparing "low costs" (i.e. the inspection fee) with "high benefits" (i.e. the NHTSA societal costs). It is inconsistent to contrast out of pocket costs with the highest potential societal economic benefit which includes estimates for pain and suffering, lost wages, etc. Even using the "low cost-high benefit" analysis, the achievement of cost/benefits must be based on an assumption of a high degree of effectiveness. This high effectiveness is not supported by any substantive evidence available to us.

In summary, PMVI indicates a low probability of positive cost benefit.

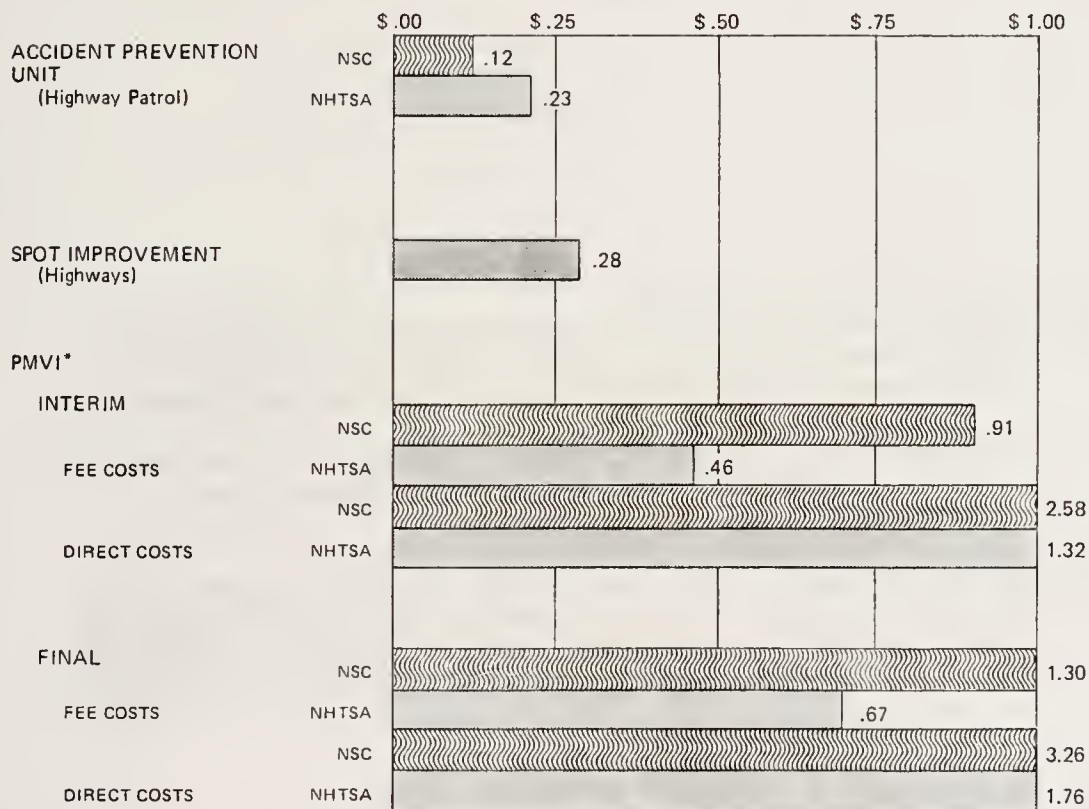


## Section IV-D Cost/Benefit Analysis

We are spending our resources on activities which have demonstrated an impact. Because our resources are limited, we must insure that any expenditures are cost effective. If we violate this principle, we are diverting funds from other cost beneficial activities. For comparative purposes, we have analyzed the cost to return \$1.00 of benefits for three program activities -- the existing accident prevention unit (APU), the existing spot improvement program and the proposed PMVI. The results of this comparison are shown below.

### STATE OF MONTANA

#### COMPARATIVE ANALYSIS OF COST / BENEFITS (COST TO PROVIDE \$1 OF BENEFITS)



\*based on a projection of 50% effectiveness

Benefits were calculated based on both NSC & NHTSA methods.

#### Section IV-E Need for Support

We need the facts to support state legislation to implement a PMVI program. Our legislators have asked:

- . will PMVI prevent accidents?
- . how much does PMVI cost?
- . what benefits does PMVI return for dollars spent?

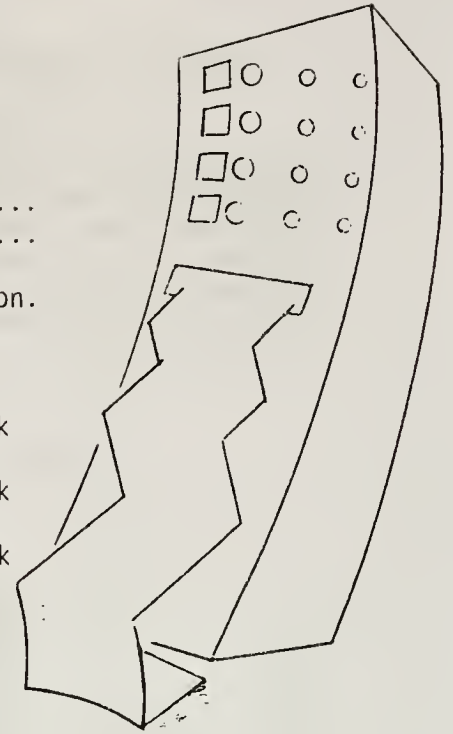
We asked the U.S. Department of Transportation for assistance in answering these questions. Following is a brief synopsis of the results of our requests for support.

....Research....

.....Facts.....

....Information.

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Q. 5-23-73 May we have PMVI information relating to cost benefits and effectiveness with a comparison of various PMVI modes - i.e., state owned, state appointed, corporate owned and random.

and

What technical experts in NHTSA are available to provide assistance in cost/benefit analysis and cost-effectiveness comparison?

A. 7-17-73 Questions dealing with cost benefit and effectiveness studies cannot be assessed adequately because sound studies have not been conducted. The enclosed show the benefit of inspection, but scientific analysis of cost effectiveness is not available at this time

. . . . .



Q. 8-9-73 Are there any research reports or studies proving that motor vehicle inspection systems can reduce accidents within a favorable cost benefit ratio?

A. No answer.

. . . . .

Q. 9-27-73 Please comment on the enclosed Analysis of PMVI costs.

A. 1-11-74 On 10-15-73 we forwarded your 9-27-73 cost study to NHTSA HQ for review and comment. Their response of 1-2-74 was not complete and we have again requested specific information regarding your cost factors and possible resulting benefits. As soon as we receive a more in-depth analyses of your position paper, we will be in contact with you.

NO FURTHER INFORMATION WAS SUPPLIED....

INSTEAD

SANCTION PROCEDURES WERE INITIATED.

#### IV-F Recognition of Montana's Highway Safety Program

The following are excerpts from correspondence giving recognition to the effectiveness of the Highway Safety Program in Montana.

2-8-74 From the NHTSA Regional Administrator

"Quite obviously, problem solving techniques used by Mr. Albert Goke in managing by objectives are beginning to pay dividends in lives saved on Montana's highways."

2-28-74 From Highway Users Federation

"Montana is one of only three states meeting its 3 x 80 total in 1974."

3-20-74 From Messrs Tiemann and Gregory - FHWA and NHTSA Administrators (notice of incentive grant \$268,044 for reducing traffic fatalities in the state. The award was granted based on performance relative to other states).

"It is our hope that these additional funds will aid your efforts to optimize the reduction of death injury and property damage resulting from traffic crashes."

4-8-75 From the NHTSA Regional Administrator

"This letter is to ... continue to encourage you to attack your problems with the problem solving procedures we have discussed ... (based on) ... our decision to more effectively assign Sec. 402 funds to problem identification and problem solving with less emphasis on standard implementation."

We are not alone in believing what we are doing is working.



***DCA***

